ATTACHMENT A

Professor Michael R. Baye
Professor of Business Economics

Kraft Foods Global, Inc., et al. **v.** *United Egg Producers, Inc., et al.*

1:11-cv-08808 (NDIL)

October 30, 2023

Government Service

U.S. Federal Trade Commission (FTC)
Director of the Bureau of Economics
(2007 - 2008)

Consumer Financial Protection Bureau (CFPB)
Academic Research Council
(2019 - 2021)

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Summary of Opinions

1 The conspiracy restricted the nation's flock size and egg production, inflated the market prices of eggs, and injured the plaintiffs by raising the prices of eggs purchased from defendants and co-conspirators.

2 The relevant market includes all eggs for human consumption in the United States, regardless of whether they are shell eggs or egg products.

3 Economic features of the egg industry made it economically plausible that defendants could collude to restrict supply and raise prices.

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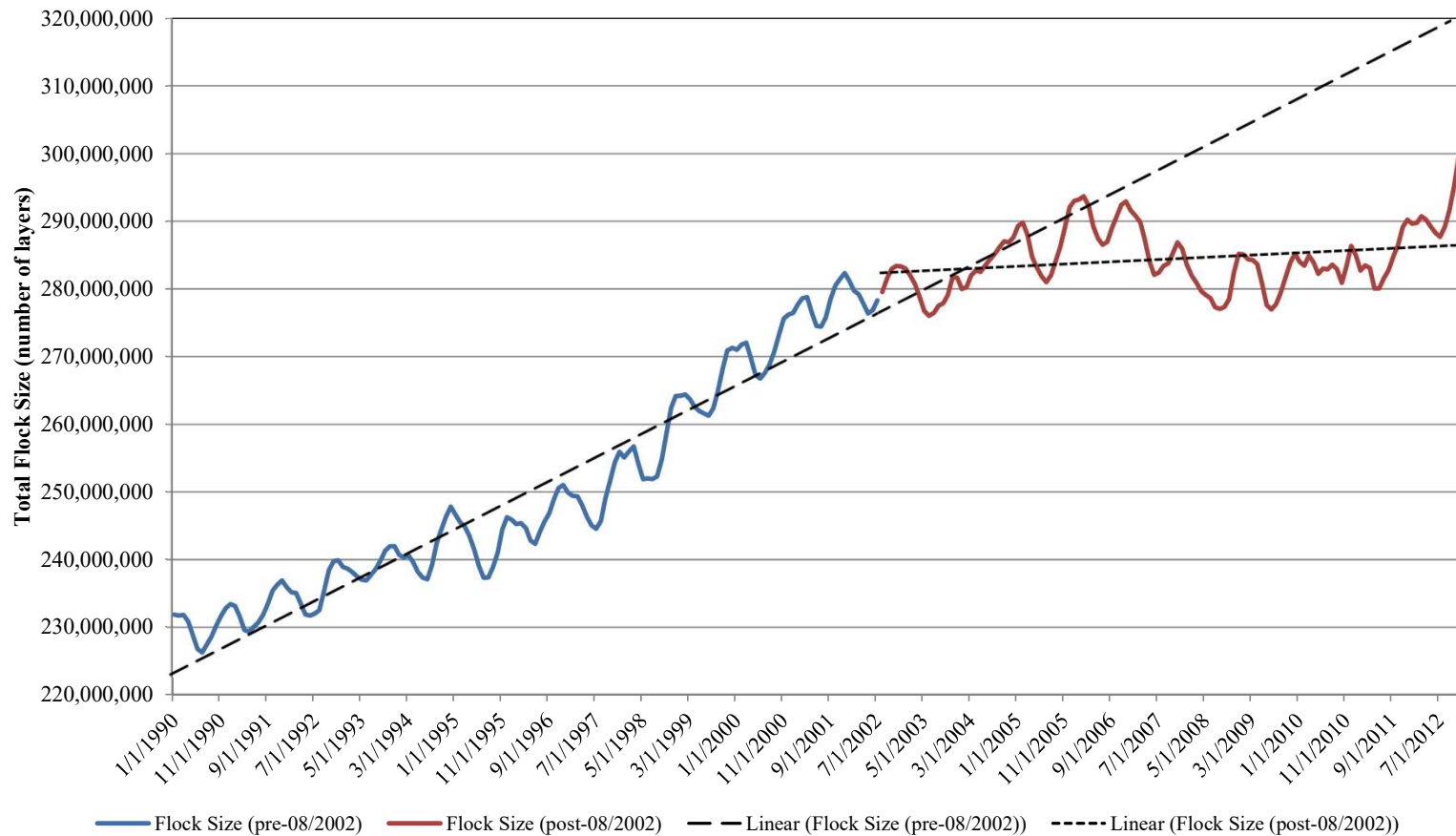
4

Inelastic Industry Demand

- Amount consumers buy does not change much when prices increase

- Products like gasoline or eggs that have poor substitutes

Small reduction in supply leads to large price increases

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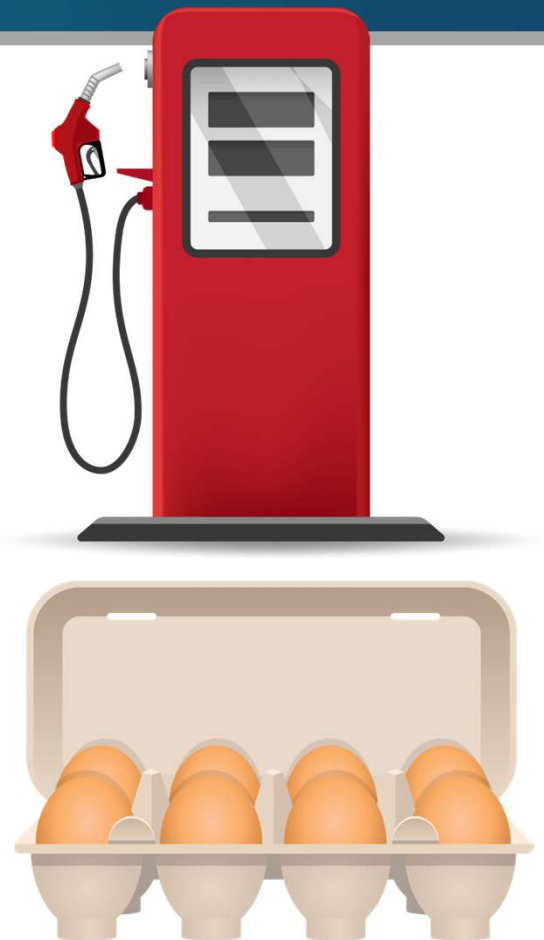
Total Flock Size with Linear Trends (1990-2012)

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Variables Accounted For

- Feed/Grain Costs

- Electricity Costs

- Diesel Costs

- Agricultural Wages

- National Income

- Population

- Interest Rates

- Seasonal Fluctuations

- Other changes, including changes in demand for animal welfare over time

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Description of Indicators for the Alleged Conspiracy

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Dummy	Date Applied	Minimum Average Space per Hen		100% Rule in Effect	Backfilling Ban
		White Leghorn	Brown Egg		
(a)	(b)	(c)	(d)	(e)	(f)
Restriction 1	August 2002[1]	56 inches	63 inches	*[2]	
Restriction 2	February 2004[1]	59 inches	66 inches	X	*[3]
Restriction 3	August 2005[1]	61 inches	68 inches	X	X
Restriction 4	February 2007[1]	64 inches	72 inches	X	X
Restriction 5	August 2008[1]	67 inches	76 inches	X	X
Backfilling Ban	February 2005			X	X

Notes:

[1] Date applied on estimated first month which a day old chick would enter production under stated cage sizes.

[2] The 100% Rule first appeared in the 2003 edition of the UEP guidelines.

[3] Backfilling was banned as of February 2005. Automatic failure of an audit for backfilling and commingling of eggs first appeared in the 2006 edition of the UEP guidelines.
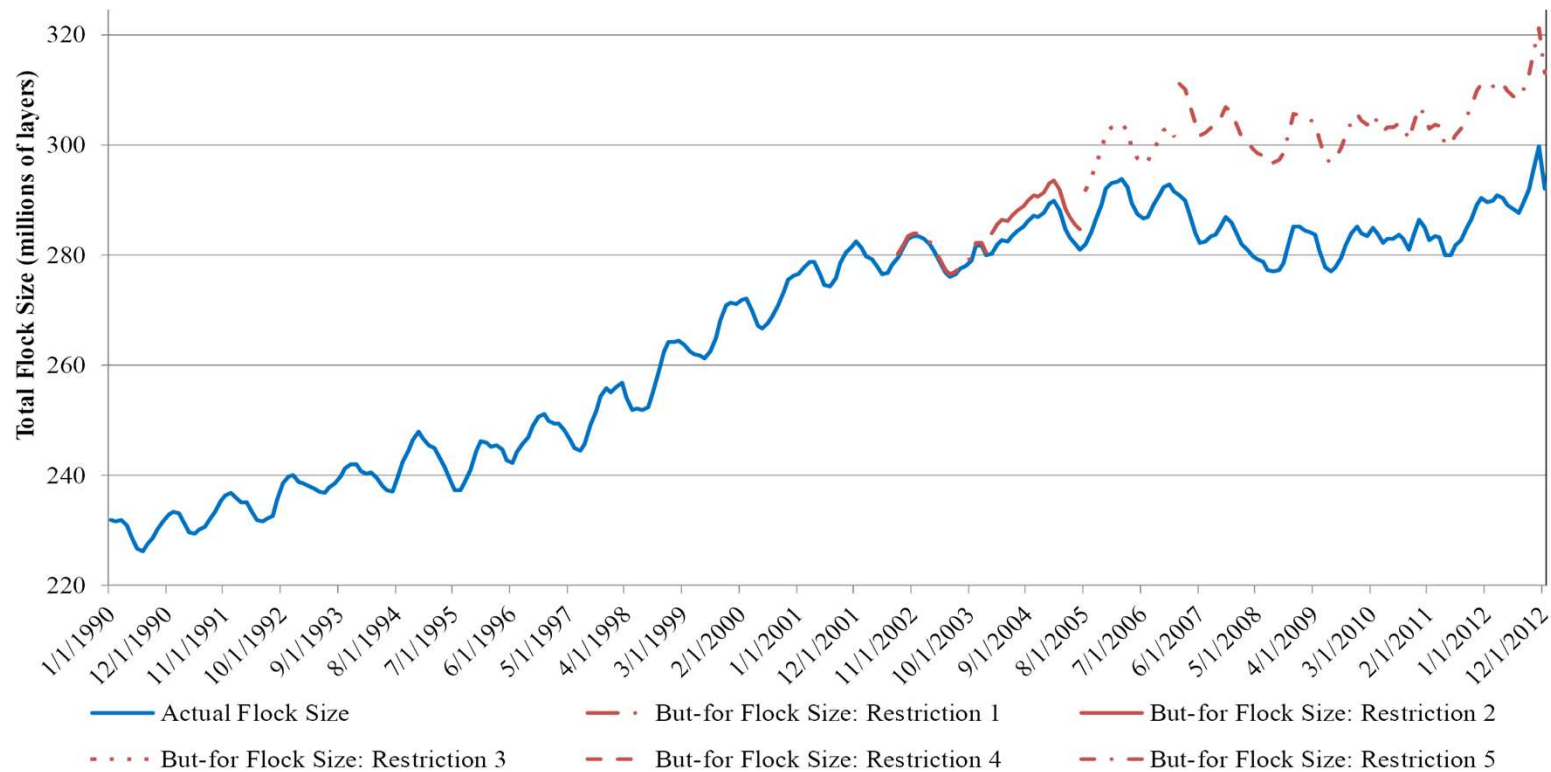
Source: CM00180890-905; UE0809972-88; UE0242998-3016; CM00188710-32.

Source:
Baye Rep. Ex. 12

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Percent Fewer Hens Compared to But-For World

Restriction	Effective Date	Minimum Average Space Per Hen		% Reduction of Flock Size	Statistically Significant at 99% Level
		White	**Brown**		
Restriction 1	Aug. 2002 – Jan. 2004	56 inches	63 inches	0.2%	NO
Restriction 2	Feb. 2004 – July 2005	59 inches	66 inches	1.3%	NO
Restriction 3	Aug. 2005 – Jan. 2007	61 inches	68 inches	3.3%	YES
Restriction 4	Feb. 2007 – July 2008	64 inches	72 inches	6.5%	YES
Restriction 5	Aug. 2008 – Dec. 2012	67 inches	76 inches	6.7%	YES
Backfilling Ban	February 2005			2.8%	YES

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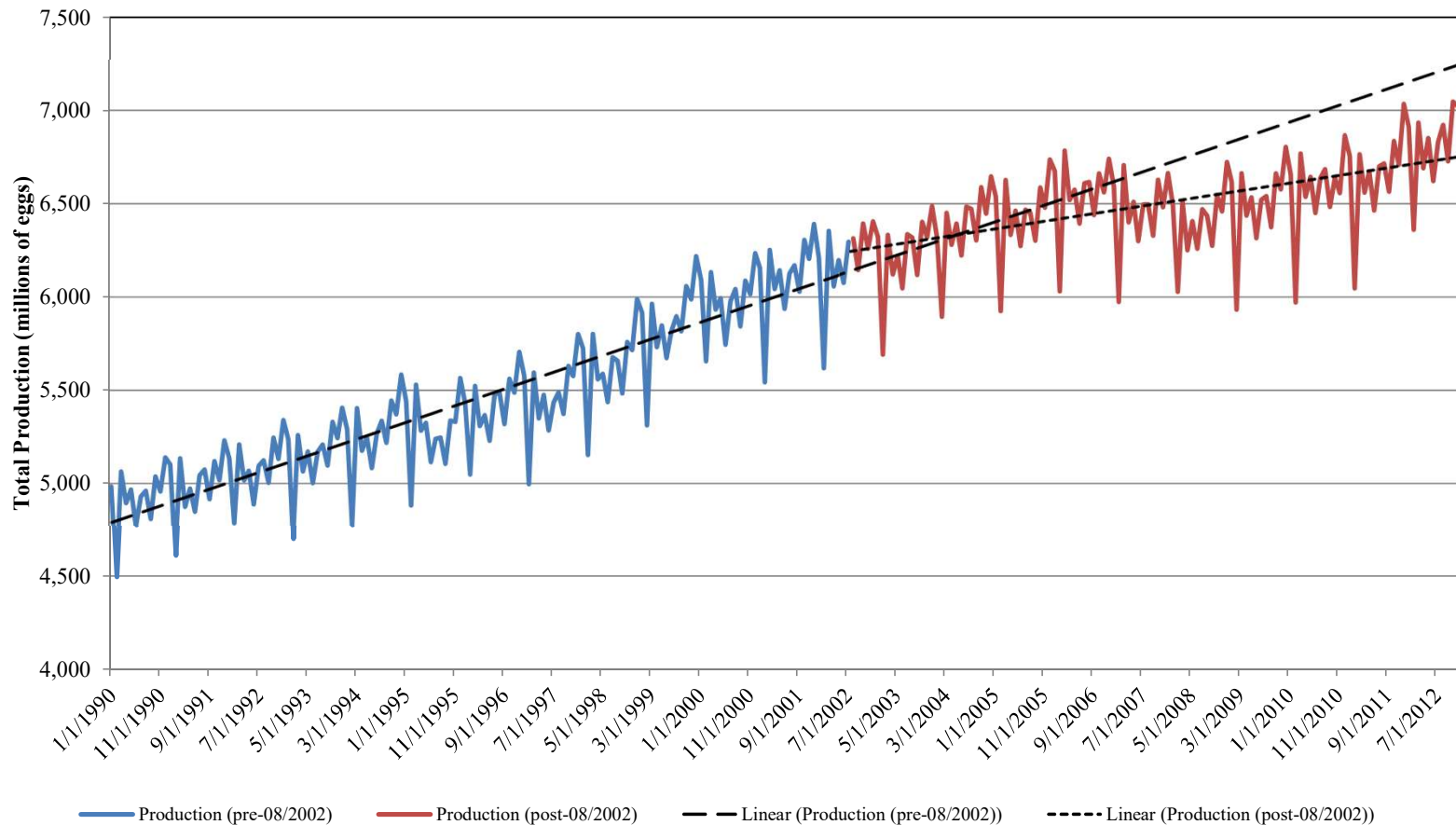# Actual Flock Size vs. But-For Flock Size: 1990-2012

Source: USDA.

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# Total Egg Production with Linear Trends (1990-2012)

Source:
Baye Rep. Ex. 15   Source: USDA.

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Percent Fewer Eggs Compared to But-For World

Restriction	Effective Date	Minimum Average Space Per Hen		% Reduction of Egg Production	Statistically Significant at 99% Level
		White	Brown		
Restriction 1	Aug. 2002 – Jan. 2004	56 inches	63 inches	0.2%	NO
Restriction 2	Feb. 2004 – July 2005	59 inches	66 inches	0.6%	NO
Restriction 3	Aug. 2005 – Jan. 2007	61 inches	68 inches	2.4%	YES
Restriction 4	Feb. 2007 – July 2008	64 inches	72 inches	5.5%	YES
Restriction 5	Aug. 2008 – Dec. 2012	67 inches	76 inches	5.2%	YES
Backfilling Ban	February 2005			2.1%	YES

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Actual Egg Production vs. But-For Egg Production
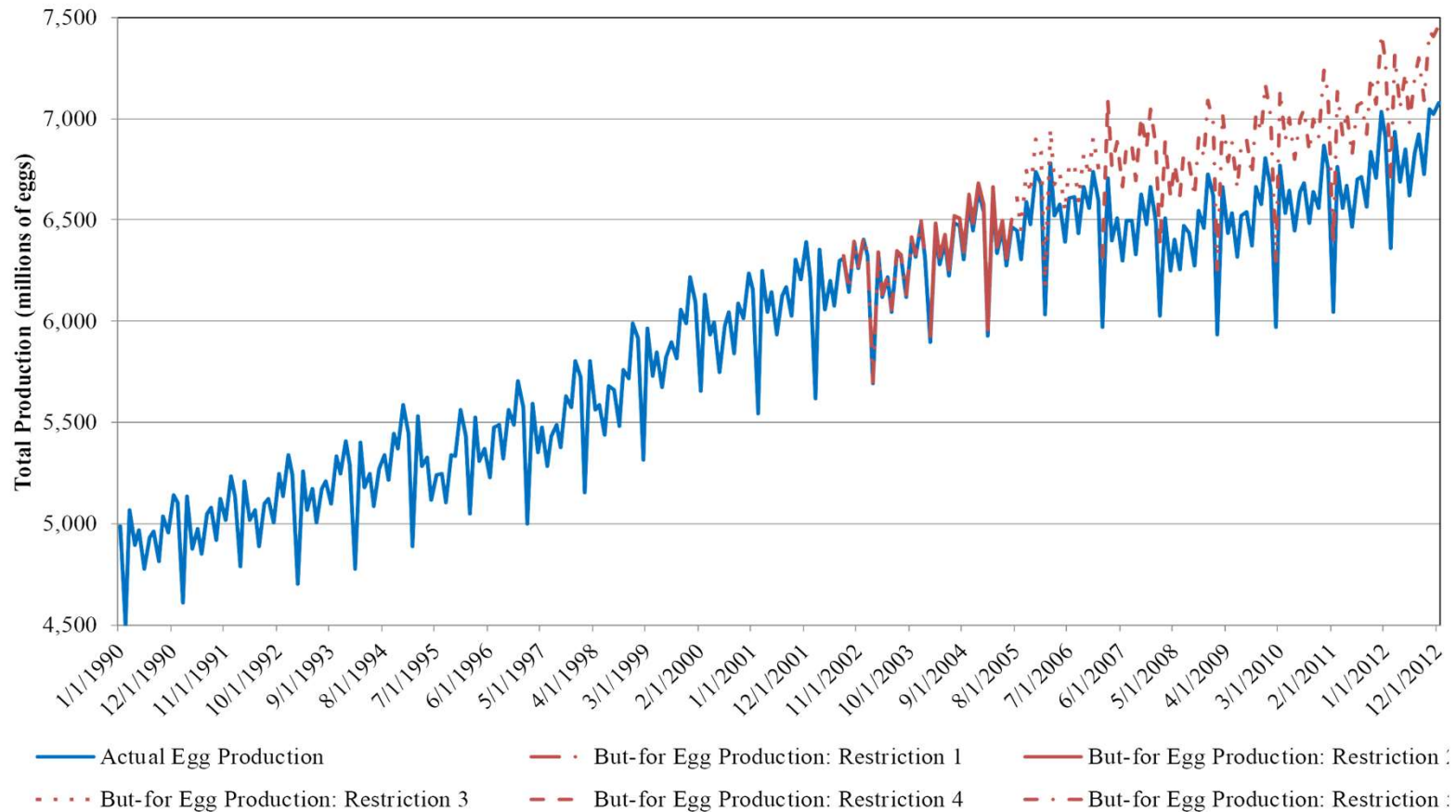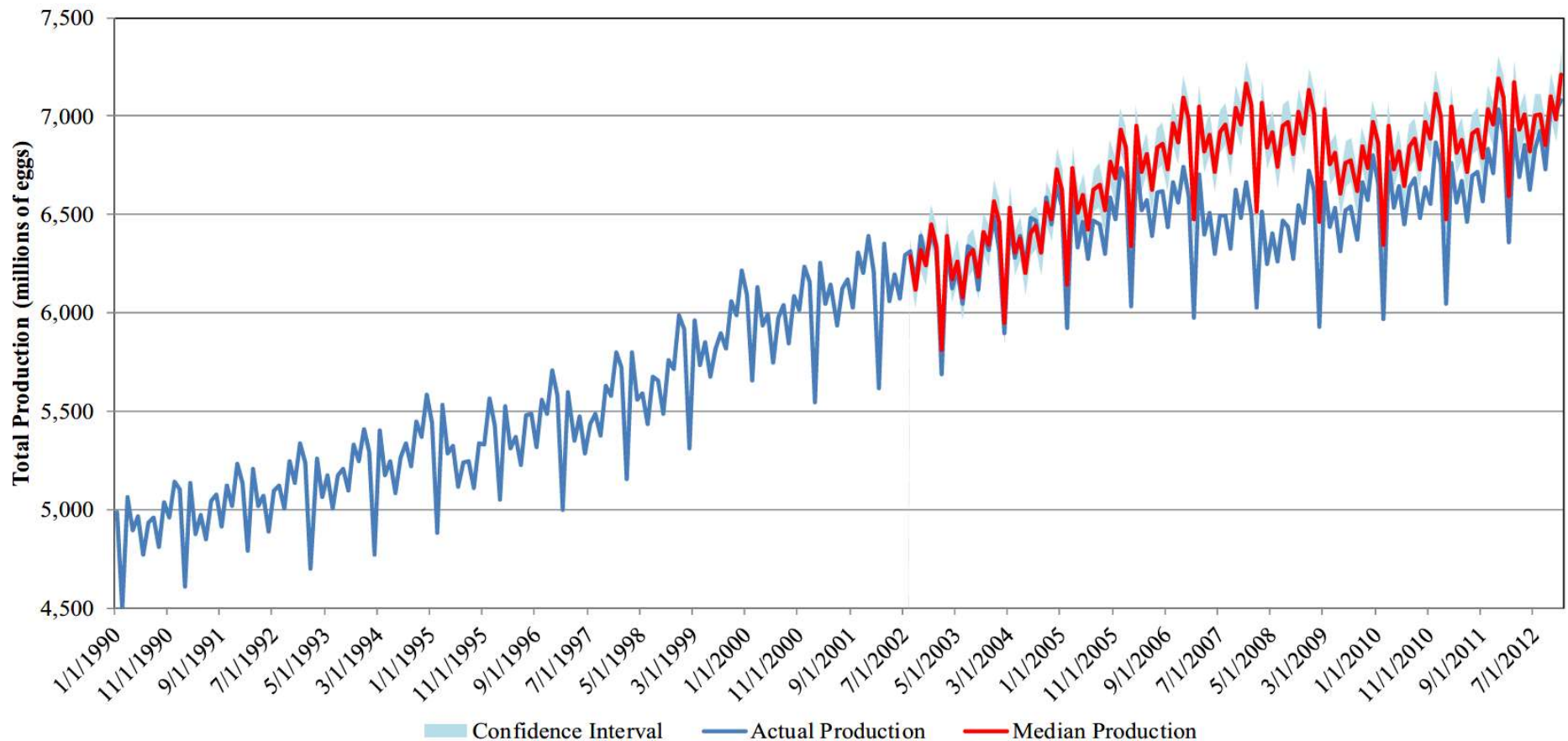

Source:
Baye Rep. Ex. 17   Source: USDA.

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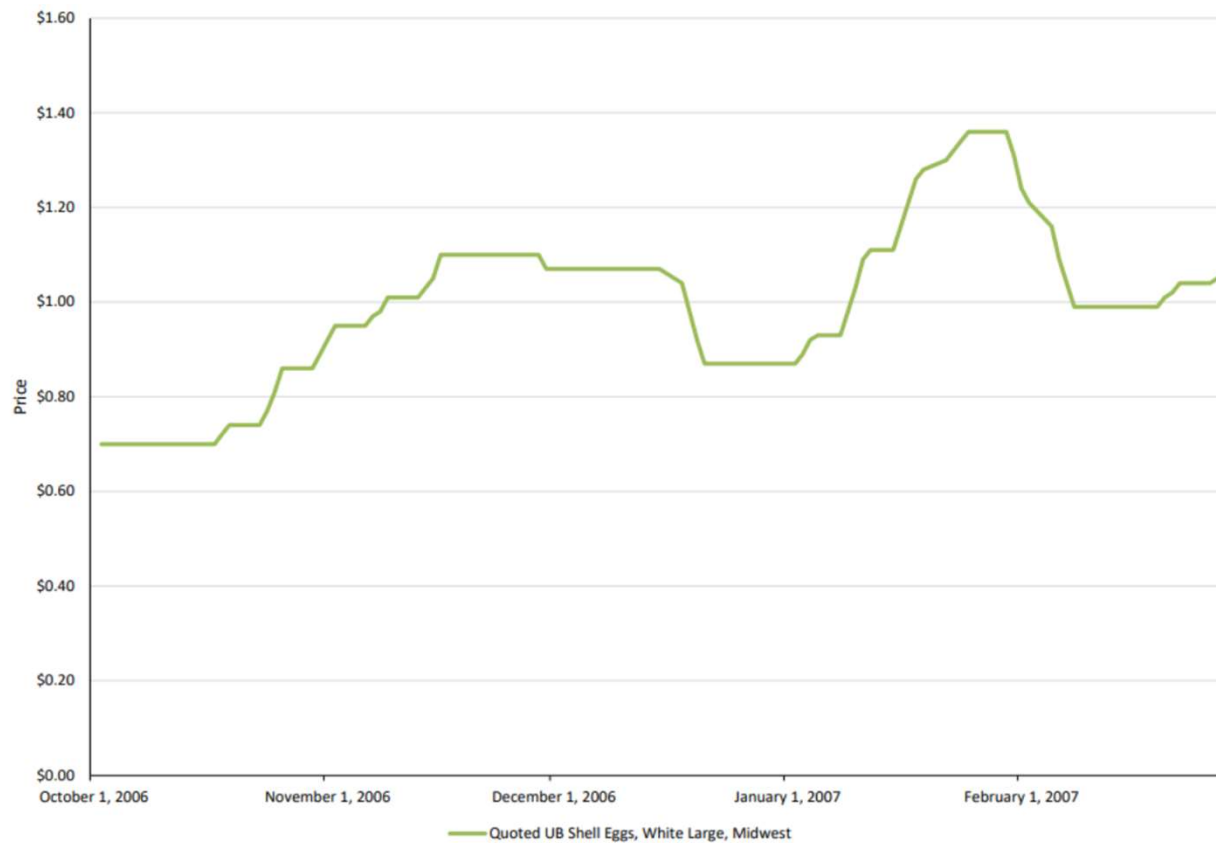# Actual Flock Size vs. But-For Flock Size
1990-2012 (VAR Model)
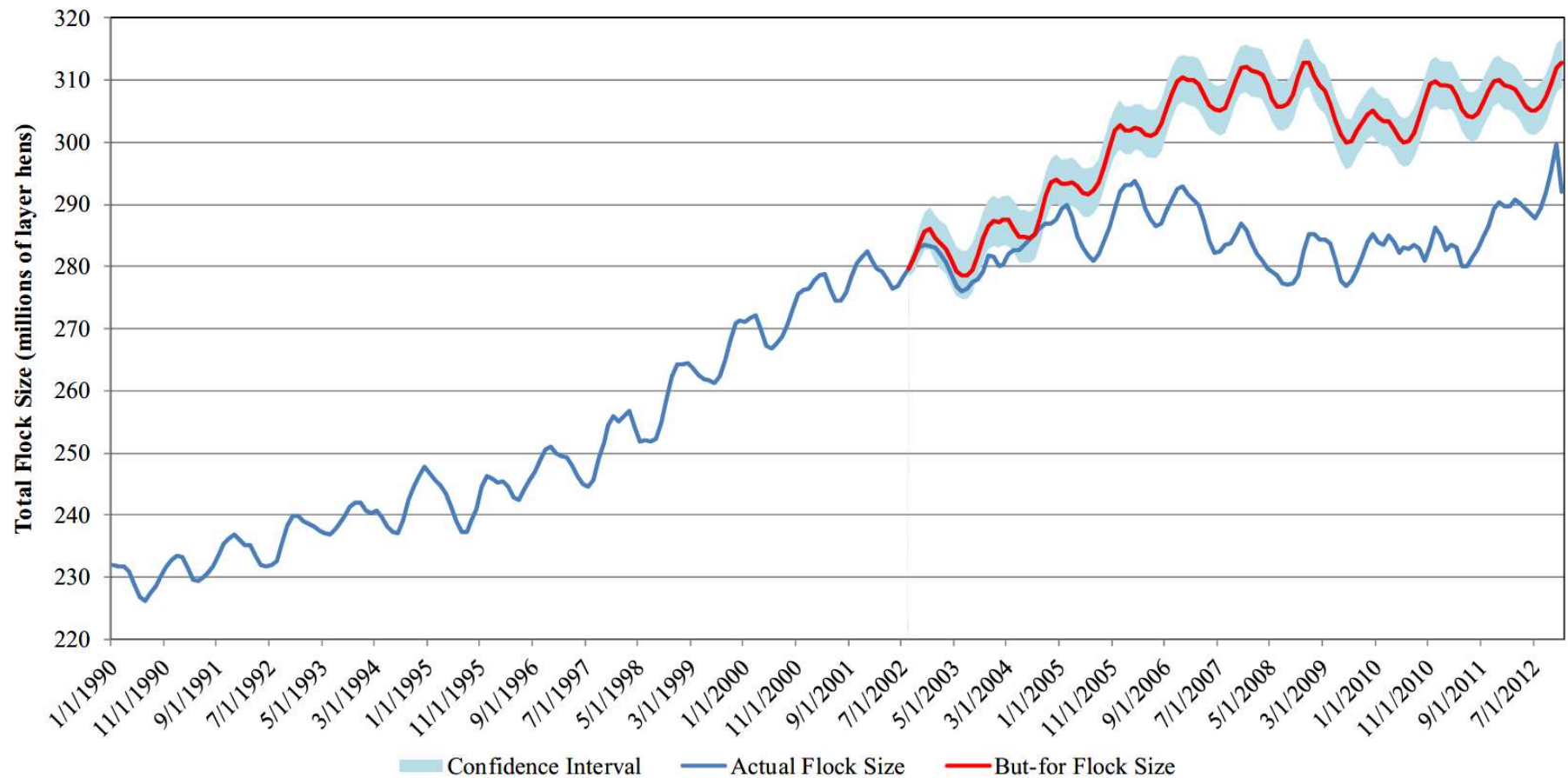
Source: Baye Rep. Ex. 18

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Actual Egg Production vs. But-For Egg Production 1990-2012 (VAR Model)

Source: Baye Rep. Ex. 19

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Urner Barry Shell Egg Price (White Large, Midwest)


Source: Baye Report Backup, Urner Barry Data

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Range of Increases in 27 Urner Barry Egg Product Prices

	Restriction 3	Restriction 4	Restriction 5	Backfilling
LIQUID EGGS				
Most Inelastic	59.71%	199.06%	181.37%	51.27%
Least Inelastic	21.08%	56.44%	52.59%	18.42%
FROZEN EGGS				
Most Inelastic	39.40%	117.55%	108.34%	34.13%
Least Inelastic	20.11%	53.55%	49.93%	17.59%
DRIED EGGS				
Most Inelastic	36.47%	107.00%	98.79%	31.64%
Least Inelastic	18.91%	49.96%	46.62%	16.54%

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Prices of 41 Types of Shell Eggs Also Increased

	Restriction 3	Restriction 4	Restriction 5	Backfilling
Shell Eggs (Graded)				
Most Inelastic	30.92%	87.84%	81.37%	26.90%
Least Inelastic	15.80%	40.94%	38.28%	13.84%
Shell Eggs (Breakers)	41.16%	124.04%	114.21%	35.63%

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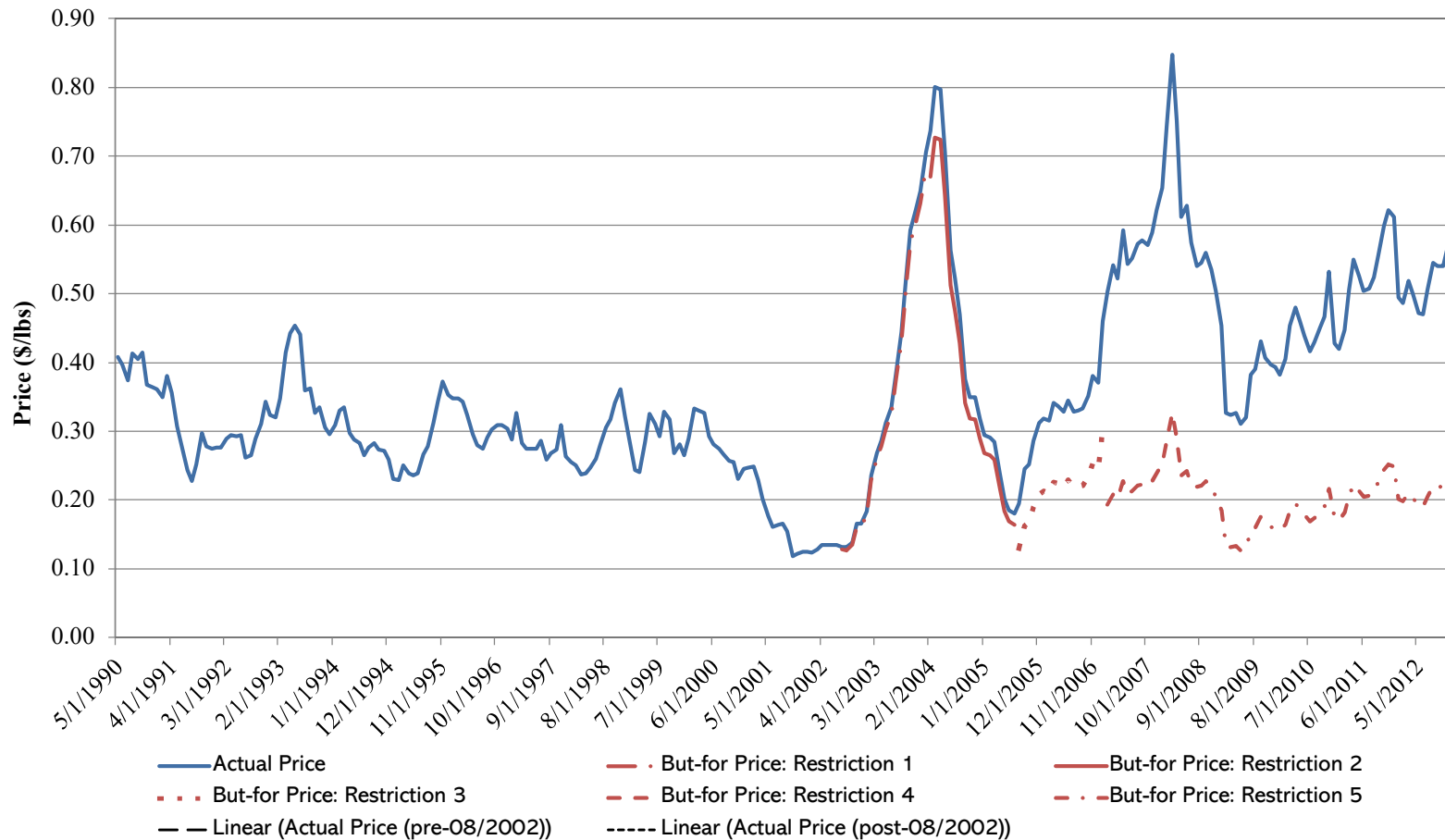# Actual vs. But-For Price of Dried Whole Plain Egg 1990-2012

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Actual vs. But-For Price of Dried Egg White 1990-2012
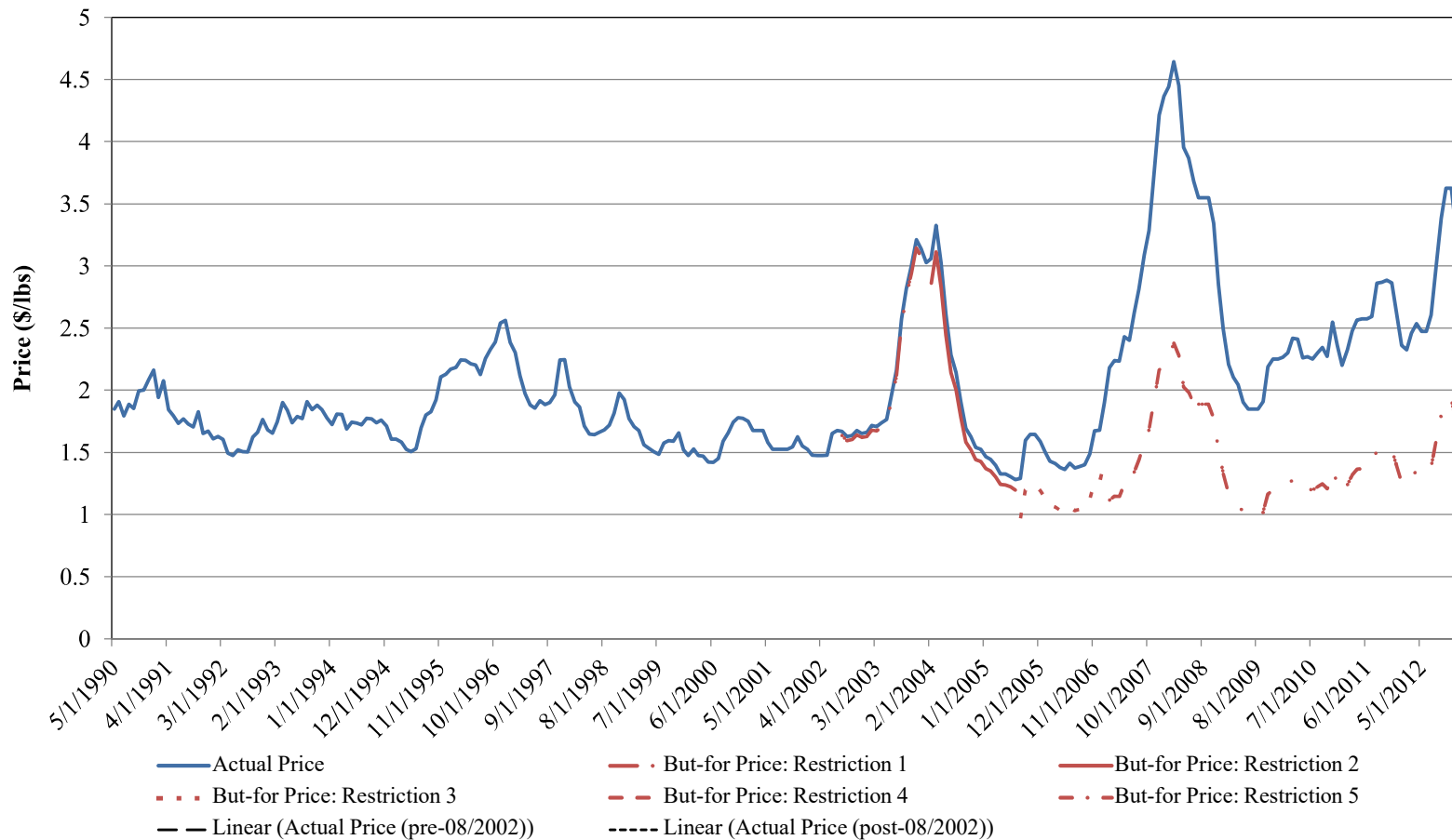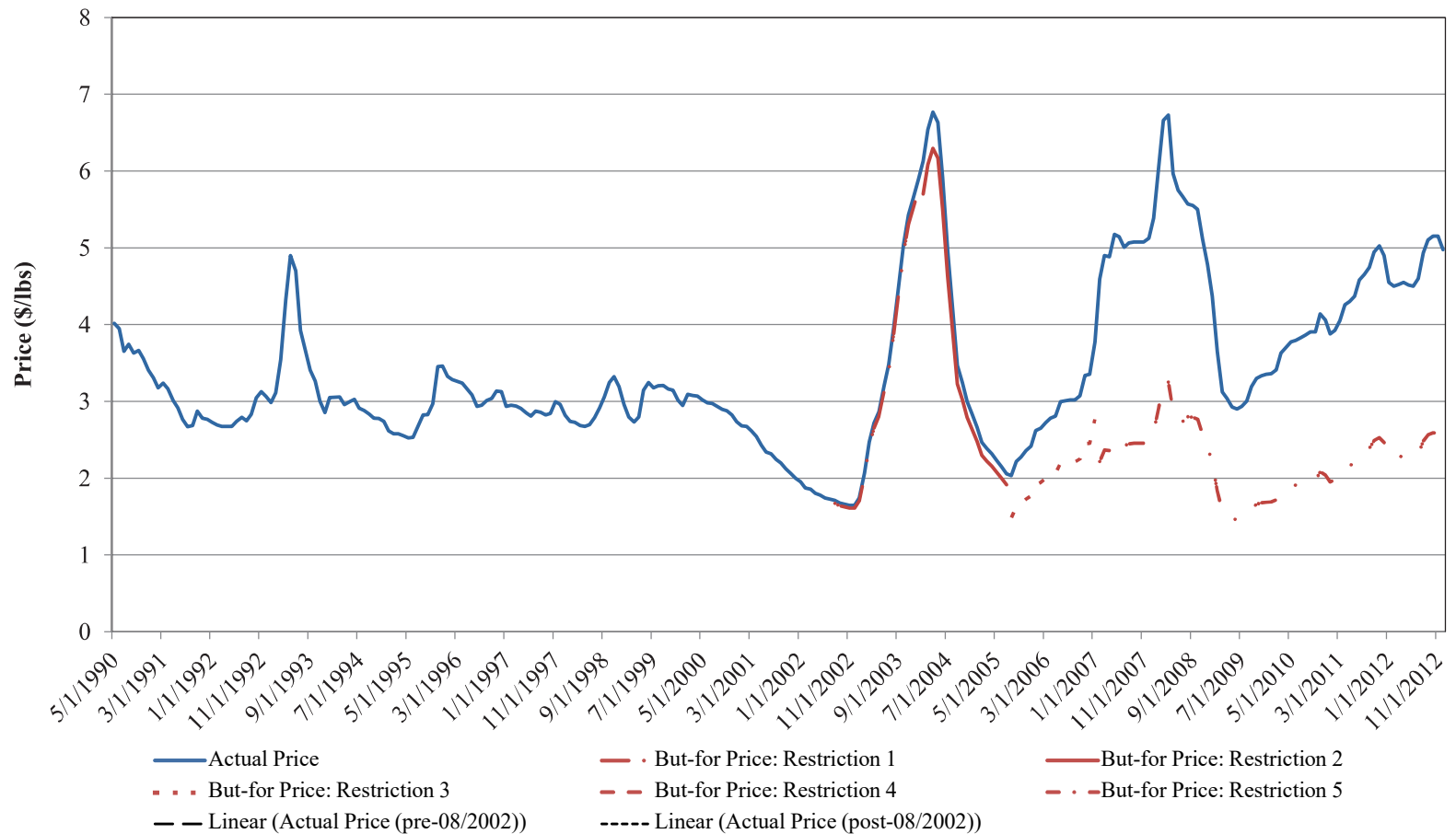
Source: Urner Barry.

Actual vs. But-For Price of Liquid Egg Whites 1990-2012

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Price Effects of USEM Coordinated Exports: 2006-2008

Month	Quantity Exported			U.S. Egg Consumption	Percent Decrease in Domestic Sales Due to Coordinated Export	Percent Increase in Price Due to Coordinated Export
	Containers	Cases	Dozens	-----(Dozens)-----		
			$[30*(d)]$		$[-(d)/(d)+(e)]$	$[((1+(f))^{\wedge}(-6.11)-1)]$
(a)	(b)	(c)	(d)	(e)	(f)	(g)
October-06	90	76,500	2,295,000	552,263,416	-0.41 %	2.57 %
January-07	300	246,600	7,398,000	538,780,322	-1.35	8.69
February-07	300	243,750	7,312,500	487,190,666	-1.48	9.53
April-07	200	160,000	4,800,000	524,758,489	-0.91	5.72
October-07	130 [1]	106,003	3,180,085	546,598,949	-0.58	3.61
June-08	100	80,000	2,400,000	510,075,868	-0.47	2.91

Note: Percent increase in price calculated using an inverse elasticity of -6.11076 for Northwest White Jumbo Shell, the most elastic demand estimated from the 2SLS model.

[1] Number of cases estimated using average number of cases per container for available data.

Source: NL001776; MOARK0009486-93 at MOARK0009486; NL001774-5 at NL001774; MOARK0008660-69 at MOARK0008660; UE0199809-10 at UE0199809, UE01998010; RA0000703-10 at RA0000703, RA0000704; RA0002299-306 at RA0002299; MOARK0007450-1 at MOARK0007450; MOARK0036622-3 at MOARK0036622; MOARK-IPP-0028504-5 at MOARK-IPP-0028504, MOARK-IPP-0028505; USDA.

Source: Baye Rep. Ex. 26

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